

June 4, 2003

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

10 CFR 50.73

Gentlemen:

**TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 2 -
DOCKET NO. 50-328 - FACILITY OPERATING LICENSE DPR-79 -
LICENSEE EVENT REPORT 50-328/2003-005-00**

The enclosed report provides details concerning an automatic reactor trip resulting from a spurious turbine vibration trip signal. This event is being reported, in accordance with 10 CFR 50.73(a)(2)(iv), as an event that resulted in an automatic actuation of the reactor protection system.

This letter is being sent in accordance with NRC RIS 2001-05.

Sincerely,

Original signed by

Richard T. Purcell

Enclosure

cc: See page 2

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cc (Enclosure):

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(See reverse for required number of digits/characters for each block)

4. TITLE

Reactor Trip Resulting From a Spurious Turbine Vibration Trip Signal

12. LICENSEE CONTACT FOR THIS LER

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

NRC FORM 386 (7-2001)

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
Sequoyah Nuclear Plant (SQN) Unit 2	05000328	YEAR	SEQUENTIAL NUMBER	REVISION	2 OF 5
		2003 —	005 —	00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

I. PLANT CONDITION(S)

Unit 2 was in power operation at approximately 100 percent reactor power.

II. DESCRIPTION OF EVENT

A. Event:

On April 12, 2003, at 2221 Eastern daylight time (EDT), Unit 2 Operations personnel opened vibration power drawer No. 1 (EIS Code IT), to reset a trip light alarm on the No. 7 turbine bearing. After resetting the trip light, Operations personnel proceeded to place the drawer back into its normal position. Upon sliding the drawer back into the panel, a spurious turbine vibration trip signal occurred, with a duration of less than one second, initiating an automatic turbine trip and subsequent reactor trip. The control room operators responded to the event in accordance with plant procedures. They promptly diagnosed the plant condition, took the actions necessary to stabilize the unit, and maintained the unit in hot standby, Mode 3.

B. Inoperable Structures, Components, or Systems that Contributed to the Event:

None.

C. Dates and Approximate Times of Major Occurrences:

April 12, 2003 at ~2200 EDT	After being notified by Maintenance personnel that an alarm was present on the Unit 2 turbine vibration panel, Operations decided to reset the turbine vibration No. 7 bearing trip light.
April 12, 2003 at 2210 EDT	Operations verified that the vibration trip cutout switch was in the cutout position.
April 12, 2003 at 2215 EDT	Operations personnel proceeded to slide vibration power drawer No. 1 out of the normal position until the reset switch could be reached.
April 12, 2003 at 2220 EDT	Operations personnel reset the trip light alarm.
April 12, 2003 at 2221 EDT	Operations personnel slid the drawer back into its normal position, as it reached the fully inserted position, the Unit 2 turbine and reactor trips occur.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

D. Other Systems or Secondary Functions Affected:

None.

E. Method of Discovery:

The turbine and reactor trips were observed by operators monitoring the main control room panels.

F. Operator Actions:

Control room operators responded to the event in accordance with plant procedures. They promptly diagnosed the plant condition, took the actions necessary to stabilize the unit, and maintained the unit in hot standby, Mode 3.

G. Safety System Responses:

The plant safety systems responded to the turbine and reactor trips, as designed.

III. CAUSE OF THE EVENT

A. Immediate Cause:

The immediate cause of the reactor trip was the actuation of the turbine vibration trip signal.

B. Root Cause:

The root cause was determined to be a ground on the Unit 2 main turbine vibration drawer No. 1 causing the main turbine vibration trip relay to actuate. An investigation determined that the drawer wiring had been pinched and several wires had exposed conductors. When the drawer was inserted, it is suspected that one of the exposed conductors shorted against the cabinet casing or shorted with another exposed conductor that caused the relay coil actuation.

C. Contributing Factor:

A contributing factor was that Operations believed with the turbine vibration coil relay trip/cutout switch in the cutout position, a turbine trip could not be initiated. The ground resulted in the turbine vibration trip signal bypassing the trip/cutout switch.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

IV. ANALYSIS OF THE EVENT

The plant systems responded to the turbine and reactor trips, as designed. The reactor coolant system (RCS) average temperature was near its program value prior to the reactor trip. Following the reactor trip, the loss of nuclear heat generation and the introduction of cold auxiliary feedwater resulted in a rapid decrease in RCS average temperature. RCS temperature was restored to its no-load condition after the reactor trip. The minimum RCS average temperature during this event was 539.3 degrees Fahrenheit. Emergency boration was not required based on the shutdown margin requirements. Therefore, RCS temperature remained within technical specification and Final Safety Analysis Report (FSAR) analysis requirements during the event. The plant safety systems response during and after the unit trip were bounded by the responses described in the FSAR.

V. ASSESSMENT OF SAFETY CONSEQUENCES

Based on the above "Analysis of The Event," this event did not adversely affect the health and safety of plant personnel or the general public.

VI. CORRECTIVE ACTIONS

A. Immediate Corrective Actions:

An investigation was performed on the Unit 2 turbine vibration drawer and determined that the wiring had been pinched and five wires had exposed conductors. The exposed conductors were repaired. A temporary modification was implemented on Unit 2 to prevent the main turbine vibration trip relay from actuating.

B. Corrective Actions to Prevent Recurrence:

A modification is being implemented on Unit 1 to remove the main turbine vibration trip circuitry. A modification will be implemented on Unit 2 to remove the main turbine vibration trip circuitry.

An inspection was performed on the Unit 1 turbine vibration drawer and the nuclear instrumentation system drawers. Some wires were determined to be damaged. The damaged wires were repaired. The other Unit 2 drawers will be inspected during the next outage.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

VII. ADDITIONAL INFORMATION

A. Failed Components:

None.

B. Previous LERs on Similar Events:

A review of previous reportable events for the past three years did not identify any similar events.

C. Additional Information:

None

D. Safety System Functional Failure:

This event did not result in a safety system functional failure in accordance with 10 CFR 50.73(a)(2)(v).

VIII. COMMITMENTS

None.